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LETTER TO THE EDITOR

TRANSFUSION MEDICINE WILEY

Absence of SARS-CoV-2 viraemia in a blood donor with COVID-19 post-donation

The recent COVID-19 pandemic caused by SARS-CoV-2 has posed significant challenges to the healthcare system and the safety and sustainability of blood supply. Most blood centres face a shortage of blood supply because of much lesser donation due to lockdown or stay-home requirements, although the reduction of non-emergency clinical services contributes to a lower blood transfusion demand.[1] Although previous experience with similar coronaviruses suggested that the transfusion transmission risk is theoretical, SARS-CoV-2 viraemia was found in symptomatic and asymptomatic patients[2] and archived samples from blood donation.[3] On the other hand, Kwon et al reported the absence of viraemia in archived samples from seven persons who donated blood 6 to 16 days prior to COVID-19 confirmation.[4] Recently, Chang et al updated, using a large-scale blood donation screening study in Hubei, that no SARS-CoV-2 viraemia was found in 98 342 donations between 9 February and April 30, 2020[5].

To further the understanding on whether viraemia is present in asymptomatic individuals, here, we report a blood donor who donated blood 7 days prior to COVID-19 confirmation. The individual gave a unit of whole blood on 5 July after passing the latest donation requirement[1] and was instructed to report any symptoms developed post-donation. The collected blood was processed into red cells, platelets and plasma. Platelet was issued to a patient with haematological disease on 9 July, whereas red cells and plasma were stored in the blood storage fridge. On 13 July, the donor presented to the hospital with upper respiratory tract symptoms that began on 12 July and was confirmed to have COVID-19. He had fever, cough and headache since 9 July, that is, 4 days after blood donation. Clinician notification, product recall and quarantine of unused blood components were then performed immediately. Archived samples from the index blood donation were sent to three laboratories to test for SARS-CoV-2 RNA, which were negative. At the same time, the recipient was followed up but remained asymptomatic and negative for SARS-CoV-2 RNA. Table 1 summarised the SARS-CoV-2 RNA results of different donor and recipient samples. Finally, as advised by Department of Health, a limited tracing was conducted for the four collecting staff members who served the donor on 5 July, and they were all negative.

In conclusion, we did not detect SARS-CoV-2 RNA in the blood donor's sample (by three testing platforms) 7 days prior to confirmation or 4 days before onset of symptoms. This suggests that transfusion transmissibility of SARS-CoV-2 remains theoretical. As a routine blood donation screening test for SARS-CoV-2 RNA is not available nor recommended by the World Health Organization, the blood safety measures against COVID-19 continue to be secured via a number of pre- and post-donation means.[1]

TABLE 1 Summarized the SARS-CoV-2 RNA results on donor's and recipient's samples

Sample	Donor	Recipient
Respiratory specimen	Nasopharyngeal and throat swab (12/7/2020)	Nasopharyngeal swab (13/7/2020)
	Lab1: Positive	Lab1: Not detected
	Lab2: Positive	
EDTA whole blood	From blood donation archived sample	Taken on 13/7/2020
	Lab1: not detected	Lab1: not detected
	Lab2: not detected	Lab2: not detected
	Lab3: not detected	Lab3: not detected
EDTA plasma	From blood donation archived sample	
	Lab1: not detected	
	Lab2: not detected	
	Lab3: not detected	

SARS-CoV-2 RNA Testing platform:
Lab1-Xpert® Xpress SARS-CoV-2 (Cepheid, Califonia, USA).
Lab2-in house RT-PCR.
Lab3-LightMix® Modular SARS and Wuhan CoV E-gene kit (TIB Molbiol, Berlin, Germany).

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CKL decided upon and wrote the manuscript. JNSL collected donor and donation information and reviewed the manuscript. PC, DCL and KKWT performed the molecular test and reviewed the manuscript. DNCT reviewed the manuscript.

CONFLICT OF INTEREST

The authors have no competing interests.

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